ZERO RETRIES

The Quarterly Newsletter of the Northwest Amateur Packet Radio Association

Fall, 1990 **Volume 7, Number 2**

Steve Stroh N8GNJ Editor

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I had promised several people an article for this issue detailing how some of the latest off-the-shelf packet hardware (9600 baud RF gear, IP Switches, etc.) could be used to build an advanced Node. Unfortunately, I simply couldn't complete it with as much detail as I wanted to include in reasonable time to get this issue of Zero Retries finished. Look for it in the next issue.- Ed.]

Please Renew!

Many NAPRA memberships expire in December and January. Please take a moment to check your mailing label and renew if your membership has expired.

NAPRA's only means of support is membership dues. NAPRA needs your support to maintain and enhance SEA, SEAW, and the Pacific Northwest Packet Radio Network.

1990/91 NAPRA Board of Directors is Elected

At the September, 13, 1990 NAPRA General Meeting in Renton, the following NAPRA members were elected to one year terms on the NAPRA Board of Directors. The new Board consists of:

President
Ken Koster N7IPB
Executive Vice President
Dennis Goodwin KB7DZ
Technical Vice President
Scott Cronk N7FSP
Secretary
John MacDuff KA7TTY
Treasurer
Peter Dahl WA7FUS
Directors At Large
Larry Babcock WB7USL
Terry Conboy N6RY

The Board of Directors' names, Home BBS', and phone numbers appear on the mailing cover of Zero Retries. The Board exists to make decisions on behalf of the NAPRA membership- feel free to give them a call or drop them a note and let them know what's on your mind. NAPRA Board of Director's meetings are held on the third Wednesday of each month at the Omni Restaurant, 4701 South 188th Street South in Seattle, beginning at 7:00 PM.

December 1990 General Meeting

The December 8, 1990 NAPRA General Meeting will be held at the Boeing Employees Amateur Radio Society (BEARS) Clubhouse at the Renton Municipal Airport on Airport Way in Renton. As always, we try to structure the General meetings to allow plenty of time for the featured program and a question and answer session, as well as advanced and beginner's chat sessions.

Net Controls Needed

The 9:00 PM Thursday Night Packet Radio Ragchew on the Evergreen Intertie repeater Network is an informal net and has proven to be a valuable resource to both novice and experienced packeteers. Although the net is informal, it is directed by a Net Control Station to allow as many stations as possible to get their questions and comments in. We **need more Net Control operators!** If you can help, please contact NAPRA Executive V.P. Dennis Goodwin KB7DZ @ KD7NM or 871-5818

ZERO RETRIES

The Quarterly Newsletter of the
Northwest Amateur Packet Radio Association

Fall, 1990 Volume 7, Number 3

Steve Stroh N6ONU Editor

In This Issue

Board of Directors is Elected

Picture Report!

Meeting Minutes

Packet Radio Update

Packet Radio Update

Packet Radio Update

Dropped Bits
Editorial by Steve Stroh N8GNJ

Insert standard late issue apology here.

I would very much like to thank the ten individuals that were brave enough to step forward and volunteer to be members of NAPRA's Board of Directors and congratulate the seven that were chosen. It was refreshing to be presented with a choice of directors, instead of the Board being essentially predetermined at the time of voting.

This election marked two milestones for NAPRA. The first was the use of a mail-in ballot, which went very smoothly. Those that chose to exercise their vote (slightly more than 50 percent) returned their ballots in plenty of time, and the entire election process went very smoothly. I would like to also thank Don Sandstrom KG7CP, Tom McKenna K7DPO, and Ken Koster N7IPB for volunteering for the Nominations Committee- they did a great job.

The second milestone is the end of the first year of the "Do-It-Yourself Board". Most of you will recall that a constitution/bylaw change was made in 1988 to allow seven individuals to be elected to the NAPRA Board without running for a particular office. The lucky seven would then decide between themselves how they would divide up the various positions on the Board. This was a concept that was proposed by Tom Hogan WB7DCH, who had seen it used in other groups. With a year of experience, I can say (personal opinion) that it seemed to work pretty well.

I've been informed that the subject of whether or not I planned to continue to edit Zero Retries came up at a recent Board meeting. I put Zero Retries together on a time and news available basis, and both have been a limiting factor in the last year. Although I enjoy putting together Zero Retries, it's a lonely endeavor due to the lack of editorial contributions from other NAPRA members. (It's made even more lonely because there is some incredible talent out there, with lots of knowledge to share, but they just won't write.) I haven't been able to get the NAPRA officers to contribute articles either. I know that other newsletter editors have been able to generate articles with mild, humorous harassment, but that just isn't my style.

I will be starting a challenging new job soon, and I don't yet know how much spare time I will have between attending classes and the new job. Zero Retries has been late more often than it's been on time under my editorship, and it has been composed mostly of articles that I've written. Those are among the reasons that I've decided to open up the editorship of Zero Retries to any other NAPRA member who would like to try it. Editing Zero Retries really isn't that hard, especially if you have easy access to a Macintosh (which I do not). It's possible that I may continue to edit Zero Retries (only if I would be able to do it on a more timely basis), but now is an optimum time to offer the job if there are any takers. If a new Editor is found, I plan to continue contributing to Zero Retries with articles and other information. If you are interested in being the editor of Zero Retries, please contact a Board member. I'll be happy to discuss Zero Retries with you, but the selection of a new Editor is a Board matter.

Here is my usual optimistic publishing schedule for Zero Retries. As stated in the last issue, I attempt to publish four issues per year, dated per the seasons. The dates for the 1991 issues are:

Winter 1991:
Deadline: January 12
Mailing: by February 2

Spring 1991:
Deadline: April 13
Mailing: by May 4

Summer 1991:
Deadline: July 13
Mailing: by August 3

Fall 1991
Deadline: October 12
Mailing: by November 2

Included in this issue is the latest edition of the **Puget Sound Packet Information Sheet**. Copies are available at Amateur Radio Supply, C-Comm, and of course NAPRA meetings. One difference with this edition is that I hope to distribute copies of the Info. Sheet to the various other Amateur Radio clubs in the Puget Sound area. If you would like additional copies, please contact myself or John MacDuff KA7TTY.

And finally, I'd like to update you on two points that I raised in the Spring issue. The first was a plea for feedback to the Board. That plea apparently fell on deaf ears. To my knowledge the Board didn't receive any comments (other than the usual griping when a node goes down). NAPRA now has a brand new Board, and they need to hear what's on your mind. Please consider dropping them a quick note on packet- that way it can be distributed to the entire board. Phone calls are nice and immediate, but text is SO much better.

I also didn't get any volunteers to write a regular column in Zero Retries, which disappointed me somewhat. I decided to try to tackle a regular TCP/IP column, and I sure would like some company on the pages. Your writing doesn't have to be elegant! It just has to help others learn something new about Packet. Net/Rom, BBS', Traffic, Public Service, Packet Cluster, etc. are just some ideas.. Please- consider writing for Zero Retries.

Dropped File
Editorial by Steve Stroh INGN1

Puget Sound TCP/IP Notes
Steve Stroh N8GNJ

Since I'm the only one I could get to to write a column for this issue, I thought that I would try to bring you up to date on what is happening with the TCP/IP users in the Puget Sound area.

First of all, most of TCP/IP users are running NOS- the Network Operating System written by Phil Karn KA9Q and enhanced by many others, including Kelvin Hill G1EMM. NOS adds many features to the original NET software and the PA0GRI Largenet software. Most of these features benefit AX25 users, who can now connect to a NOS station and fully utilize most of the NOS station's capabilities, including a small multi-topic BBS, a fully functional Net/Rom Gateway (the ability for an AX25 users to use the Net/Rom portion of the system has finally been installed), and the ability to do a Telnet or FTP (File Transfer Protocol) session with other TCP/IP sessions. NOS is finally stable enough to use, and documentation for it is slowly (very, very slowly, which is what makes this such a learning experience) being developed. Those who have used the latest NOS releases are quite happy with the added capabilities.

A small group IP'ers has gotten together on the North end of Lake Washington on a 2m simplex frequency for the purpose of experimenting with TCP/IP in a "purer" environment than is possible on the repeaters and nodes, where we have to contend with AX25 users, BBS', and BBS forwarding.

A feature those of us in simplex range of each other find valuable is the ability to change our data transfer "windows" to be rather large. Several of us are running with windows of 2048, which basically means that we can transfer as much as 2048 bytes at a time, without having to resort to smaller packets. This makes mail forwarding and FTP's much more efficient with no increase in baud rate.

A big breakthrough came when we recently figured out how to make TCP/IP gateways work. Several of us are now communicating with the rest of the IP'ers exclusively through a gateway that Peter Dahl WA7FUS has set up. We've seldom had such good service on packet radio- the gateway takes care of all interfacing to the Net/Rom network. Since it is so easy to add multiple ports to a TCP/IP station, (just add another TNC or DRSI card and radio; the software already knows what to do with it), we expect that we will have quite a mini-network going in the next few months.

Of equal or greater importance to the gateway breakthrough was learning how to use RIP- TCP/IP's Routing Information Protocol, which automatically figures out routes to other TCP/IP stations. We have RIP working, but not quite perfected yet, but it is now possible for a TCP/IP station to come on the air and announce it's presence to any other TCP/IP stations that are within range. Those stations will then respond with the information that they have for the rest of the network, and the station will update it's routing tables to incorporate the new information.

As exciting as RIP is, a new routing protocol designed for the radio environment called Radio Shortest Path First, or RSPF, promises to obsolete RIP and provide much higher quality routing decisions. RIP was designed for the wired Network world, where a path is either there, or it isn't. It has trouble coping with paths that vanish and reappear, as is common on VHF and UHF.

We've had lots of fun sharing information and insights via the TCP Simple Mail Transfer Protocol. SMTP allows the use of mail lists, where one message can be sent to all other TCP/IP stations automatically. SMTP, in contrast to a typical BBS, delivers the mail to your own system and stores it on the computer's disk. There are two developments in the works for group messaging that are very exciting- Post Office Protocol, or POP, and the Terakoya system. POP is a server (a node dedicated to a specific purpose) that is set up designed to handle SMTP much more efficiently. It does a much better job of distributing SMTP efficiently, and will queue mail for stations that aren't currently on the air and deliver it rapidly when the station reappears. Terakoya is a fully developed "distributed news" system, and functions much like a typical BBS, with two exceptions. It resides on a TCP/IP user's computer, and partitions a particular topic off with other messages relating to that topic. You would set your TCP/IP station up to only accept the types of bulletins you are interested in. If you want all of the RTTY DX bulletins, but none of the AMSAT bulletins, the AMSAT bulletins are never forwarded to your machine. Note that Terakoya is not currently compatible with the WORLI type Packet BBS- it communicates only with other Terakoya servers, although it's certainly possible that software could be written to communicate between the two.

FTP, is one of TCP/IP's most used features. You can exchange files with another TCP/IP station easily and conveniently. This is because FTP, like any other TCP/IP service, can be run simultaneously with other TCP/IP service. I often check into the KD7NM BBS while simultaneously transferring SMTP mail and FTP files.

You might have heard the term NOS-IN-A-BOX and wondered what it meant. NOS-IN-A-BOX is a generic term for the idea of setting

up the NOS software so that it can be run in a dedicated switch, as opposed to a general purpose computer with screen, keyboard, and disk drives. The IP Switch, as it would be called, would function much like a Net/Rom node, only much more efficiently. By definition, an IP Switch has much more memory available to it (as much as several Megabytes) and can therefore run much more powerful networking software, such as NOS. Net/Rom compatibility is supported as a standard part of NOS, and it is hoped that modules for ROSE and Texnet, two other Amateur Radio networking protocols will be developed for use in an IP Switch. One of the most exciting IP Switches is Grace Communications' PacketTen, a very powerful 68000 based 5 port (minimum) switch that is now shipping. Kantronics has their DE56, a V40 based a two port (plus serial port) switch that is now shipping. The much-promised, long-delayed AEA 80186 based 4 port PS186 is supposed to be shipping "Real Soon Now", according to the software developers who are porting NOS to it. DRSI has shown prototypes of their Awesome I/O Board, a V40 based two port (minimum) switch, which can be used standalone or plugged into an IBM PC compatible computer (as can the PacketTen). Unfortunately, it seems likely that the AIOB will never be produced due to legal problems between DRSI and the AIOB's creator.

High speed RF links are likely to be one of the next projects to be tackled by some of the TCP/IP'ers (we're a busy, active bunch). Not only would higher speed links speed up keyboard chats, but it would make short work of FTP sessions, which would be most welcome considering that several of us change NOS versions about once a week lately. Transferring a large file, although largely transparent, is a very slow process at the moment.

A long term project has been to establish a dedicated TCP/IP link with the very active TCP/IP'ers in Vancouver and Victoria BC. We had hoped to make some progress on that this summer, but it just didn't happen. Because the Net/Rom link to BC is so fragile, we haven't been hearing much about what they're doing on TCP/IP there (they haven't been hearing much about us either). We hope to improve our communications with them this winter.

If you would like more information about getting going on TCP/IP, just drop me a note on the KD7NM BBS, and I'll forward it (on SMTP, of course) to someone who can help you. The TCP/IP group is well represented at most NAPRA General meetings, and we're happy to answer questions and distribute software there too.

Tom Phelan KA7SEH Silent Keyboard
Bob Donnell KD7NM

Tom Phelan KA7SEH became a silent keyboard in the early morning hours of Wednesday, November 15th. Tom was an active member of the Mike and Key Amateur Radio Club and also a local community band. He also enjoyed operating on packet radio, as a regular user of the SEA and BALDY nodes. Tom had a ready smile, and a joke was always just around the corner. Tom also enjoyed operating on 2 meter and 440 MHz FM, as well as operating the Mike and Key Novice & Technician station each year since he was licensed. Tom had been experiencing heart trouble in recent times, and when he passed on, he was in the hospital after triple-bypass heart surgery. He will be missed by many. Tom was 41.

New Packet Voice Net Debuts
KE7LE

The Northwest's latest Packet discussion net, the "Packet Forum", will now be available on two meters in addition to 440. Hosted by veteran packeteer and sysop Mike Payne W0LVJ, the "Packet Forum" will commence it's weekly schedule aboard both the KE7LE Repeater on 442.45 MHz (no PL) and the W7GCI Repeater on 145.21 at 7 P.M. Monday nights beginning November 11, 1990.

Noted Puget Sound Packet Personality and owner of the 145.21 repeater, Kirk W7GCI has graciously offered a link to his fine Tacoma Repeater so that the "Packet Forum" can be enjoyed by all.

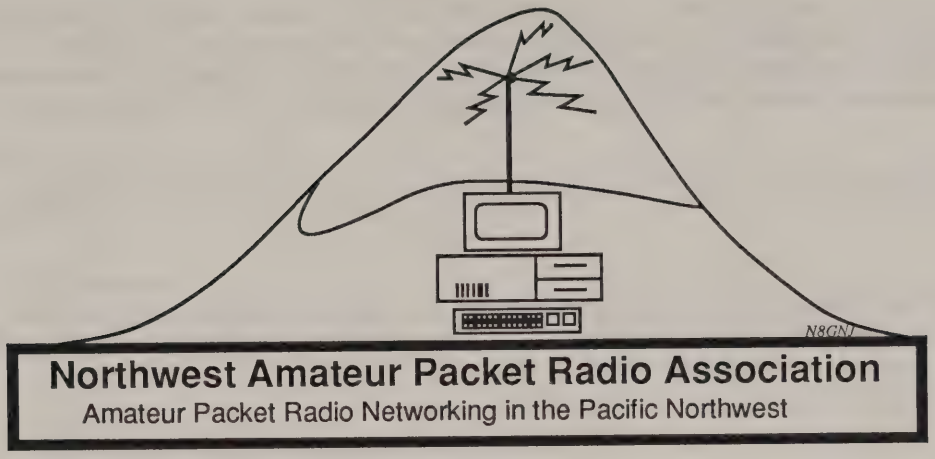
Both repeaters are located near Point Defiance in North Tacoma and enjoy a water path to the North as well as surprising local area coverage. Mike W0LVJ said "Cowabunga" when advised of this latest arrangement!

The "Packet Forum" will endeavor to keep you informed by bringing you the latest in packet news, guest speakers, Swap-N-Shop, and user's views.

Come join us on Monday nights! Now on both 442.45 and 145.21 MHz, this may be the net you've been looking for.

Not affiliated with NAPRA. No coupons accepted. Restrictions Apply.

NAPRA Notes
Steve Stroh N8GNJ



The Great NAPRA Logo Contest

Well, what do you think? The proposed logo shown above is an entry in the Great NAPRA Logo Contest. This was a contest proposed by the Board of Directors last year that kind of fell through the cracks. The current Board has decided to revive the contest. If you have an idea for a logo for NAPRA, sketch it out and send it to any NAPRA board member. The logo ideas don't have to be "camera ready"- if an idea is exciting but the sketch isn't up to the same quality as the idea it may be possible to get someone with some real artistic talent (unlike the Editor with too much time on his hands one day) to embellish your idea. So whatever it is, send it in!

Elmer's Not Dead!

You may remember in the last issue of Zero Retries that I issued a request for volunteers to step forward for Packet Elmer duty and be duly listed in Zero Retries. Well, the first victim, er, volunteer has stepped forward. I'm pleased to announce that Mark McClain N6OBY has volunteered to help others get started in packet. His special expertise is helping packet beginners get going and other necessary chores such as building cables. Mark can be reached at 881-9389 or on the KD7NM BBS. Thanks very much for volunteering, Mark! How about it? Any other packet Elmers out there? Let's hear from you. The editor's address is on the back cover of every Zero Retries.

SEAW BBS Changes

Bob Donnell KD7NM gleefully announced recently that Pete Kallio N7ENT has taken over BBS duties on the 144.99 SEAW Node. Pete is running MSYS and is located in Port Orchard. Among the reasons for Pete's new part time job are his curiosity about running a BBS, a much more reliable signal into the node (he's practically in stone throwing range of the node's hill-handy for those occaisonal "hard" resets) and he is physically located in the NTS Traffic Service Area of the node. Welcome, Pete!

SEAW Node Changes

The SEAW has been quite busy as of late. The most noticeable change has been the change of callsigns from SEAW:N8GNJ-8 to SEAW:N7FSP-8, and #SEAW:N8GNJ-7 to #SEAW:N7FSP-7. Scott Cronk N7FSP, NAPRA Technical Vice-President felt that it was more appropriate to have his callsign on the hill rather than N8GNJ's, since N8GNJ was not really active on the SEAW node on a regular basis. In a recent conversation with me that the SEAW node hardware is badly in need of an upgrade. The unusual collection of hardware that make up the SEAW node could be enhanced with the use of more standardized hardware (the same brand of TNC, for instance), and perhaps some new radios. Some power problems have been observed that could probably be eliminated with a float charged battery, which would eliminate the dead time between a power bump and the site's generator cutting in. If you are interested in helping out in upgrading the SEAW node, contact Scott directly.

The other recent change is having a less subtle effect. Due to a shortage of available hardware, the TNC which housed the SEAW nodes' Converse (Chat) Node had to be swapped out when the the SEAW TNC developed problems and became unreliable. Extensive thermal testing of the former SEAW TNC by former NAPRA Technical Vice-President Bob Donnell KD7NM finally resulted in a hard failure. It's unknown when the Converse Node will return to SEAW.

Proposed Constitution Changes
Dennis Goodwin KB7DZ

The purpose of these relatively minor proposed Constitutional changes is to "clean up" the Constitution so that it would be possible for NAPRA to incorporate as a Not-For-Profit corporation in Washington. Please note that a decision has not yet been made to incorporate. That decision is currently being considered by the NAPRA Board of Directors. A copy of the complete NAPRA Constitution is available to any NAPRA member on request.

ARTICLE 1: NAME ***(Current)***
The name of the organization is the NORTHWEST AMATEUR PACKET RADIO ASSOCIATION, hereafter referred to as NAPRA.

ARTICLE 1: NAME **(Proposed)**
The name of this Corporation is the NORTHWEST AMATEUR PACKET RADIO ASSOCIATION, hereafter referred to as NAPRA. NAPRA is a Not-For-Profit Corporation. This Corporation shall have perpetual existence.

ARTICLE III - MEMBERSHIP ***(Current)***
(Parts 5 and 6 do not exist in the current Constitution.)

ARTICLE III - MEMBERSHIP **(Proposed)**
5. No funds of this Corporation shall be expended for personal gain or benefit of any member of this Corporation.
6. In the event of dissolution as provided in the By-Laws of the Corporation, all debts of the Corporation shall first be paid, and then all remaining assets shall be distributed to another Not-For-Profit Amateur Radio organization.

ARTICLE IV - OFFICERS ***(Current)***
(Parts A and B of Article III do not exist in the Current Constitution, and would be positioned ahead of the current Part 1.)
6. Collectively all officers shall be known as the Board of Directors. The Board of Directors shall be empowered to carry out business on behalf of the membership subject to review and possible reversal by the general membership.

ARTICLE IV - OFFICERS **(Proposed)**
A. The business of this Corporation shall be administered by a Board of Directors consisting of seven members, elected by the general membership as prescribed in the By-Laws of this Corporation.
B. Collectively all officers shall be known as the Board of Directors.
(Part 6 would be eliminated.)

ARTICLE V - DUTIES OF THE OFFICERS ***(Current)***
1. The President shall preside over meetings of the organization and shall conduct same in accordance with the rules adopted, enforcing the Constitution and the By-Laws.
3. The Technical Vice President shall coordinate the technical activities of the organization.
5. The Treasurer shall collect monies and pay bills accrued to the organization. He/she shall give an account of these monies to the membership at each general meeting, shall maintain a current list of members, and shall keep an inventory of any materials owned by, or on loan to the organization. He/she shall turn over all organization assets to his/her successor at the expiration of term.

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PACKET RADIO INFORMATION

FOR WESTERN WASHINGTON - FALL 1990

The Northwest Amateur Packet Radio Association

NAPRA[1] is an organization of Amateur Radio Operators dedicated to the growth and continued improvement of the Pacific Northwest Packet Radio Network. NAPRA was one of the first organizations in the country to base their portion of the Amateur Packet Radio Network (AMPRNET) around the concept of a "backbone"- a dedicated channel for linking between nodes. This concept has proven to work extremely well- so well, in fact that the backbone channel is now seriously overloaded from the more than fifty nodes connected to it. NAPRA is involved in experiments with fast modems (9.6K and 56K baud), other packet radio protocols (such as TCP/IP), and other network layouts (frequency diversity) in an effort to relieve this congestion. NAPRA is actively soliciting new members to help design, finance, and build these advanced systems. NAPRA works closely with Western Washington's frequency coordination group, the Western Washington Amateur Relay Association (WWARA), on matters relating to Packet Radio. NAPRA is the sponsor of the two primary nodes in the Seattle area- SEA on 145.01 and SEAW on 144.99.

NAPRA General meetings are held on the second Saturday of each month, beginning at 1:00 PM. The meetings rotate between the Radio Club of Tacoma's Clubhouse, 1249 South Washington Street in Tacoma on odd months, and the Boeing Employees Amateur Radio Society (BEARS) Clubhouse at the Renton Municipal Airport on Airport Way in Renton on even months. The General meetings are structured to allow plenty of time for the featured program and a question and answer session, as well as advanced and beginner's chat sessions. NAPRA Board of Director's meetings are held on the third Wednesday of each month at the Omni Restaurant, 4701 South 188th Street South in Seattle, beginning at 7:00 PM.

Membership in NAPRA is open to all interested individuals. NAPRA's yearly dues are $15.00, which include a subscription to NAPRA's quarterly newsletter Zero Retries and help pay for maintenance and upgrades for NAPRA's nodes.

1990/1991 NAPRA Board of Directors

President: Ken Koster N7IPB@KD7NM, 821-8219
Exec. Vice President: Dennis Goodwin KB7DZ@KD7NM, 871-5818
Technical Vice President: Scott Cronk N7FSP@N7HFZ, 935-5547[2]
Secretary: John MacDuff KA7TTY@N7HFZ, 392-7623
Treasurer: Peter Dahl WA7FUS@KD7NM, 778-3581
Director At Large: Terry Conboy N6RY@KD7NM, 228-3127
Director At Large: Larry Babcock WB7USL@KD7NM, 246-8715
Newsletter Editor[3]: Steve Stroh N8GNJ@KD7NM, 481-5735

Recommended TNC Settings

Setting your TNC to these parameters will help make the most effective use of most simplex Western Washington nodes:
Dwait: 16 (160 mS) **Frack:** 6 (6 Seconds) **Paclen:** 80 **Resptime:** 10 (1 Second)

How To Get Help With Packet

The Thursday Night Packet Radio Ragchew is an excellent place to get help with any problems you might be having with Packet Radio. The Ragchew meets every Thursday evening between 9:00 and 10:00 PM on the Boeing Employees Amateur Radio Society's 145.33 repeater and other systems on the Evergreen Intertie repeater linking system. Helping newcomers to packet is a special interest of the Ragchew. Another great place to get help with packet problems is the 224.78 "Packet Intercom" voice repeater, which many Western Washington packeteers use. The RNDTBL Node, accessible from the SEAW and 220IP Nodes, is a "converse", or "chat" node. It's operation is similar to that of a voice net in that anything typed by a connected user is echoed to all other connected users. Operation of the RNDTBL node is simple- just connect to it once you are connected to SEAW or 220IP, and use the built-in help system. A package of information about Packet operation, including An Introduction to Packet Radio by Larry Kenney WB9LOZ and other useful articles is available for $5.00 (to help defray the cost of printing and postage) from NAPRA.

Operating with TCP/IP

Contact Dennis Goodwin KB7DZ[4] to obtain a TCP/IP address. Most TCP/IP activity takes place on the 220IP 224.56 repeater system and the SEAW 144.99 Node. Many users are using the newer PA0GRI, G1EMM, and KA9Q versions of NOS, which add many features not found in the original KA9Q TCP/IP NET software. When you have TCP/IP up and running, send a BBS message to N8GNJ or N7IPB so that mail and bulletins can be distributed to you via TCP/IP's Simple Mail Transfer Protocol (SMTP).

Direct, But *Deadly*! (Why Not To Connect Direct On A Simplex Node Frequency)

Briefly, the main point about connecting direct to your buddy or a BBS when using a simplex node frequency is that the node cannot act as "traffic cop" for the node frequency and allow equal access to all if you don't connect to the node and then request the node to complete the connection for you. If you do go direct on a node frequency, the node will hear your signals and refrain from transmitting. Packets sent to the node by other stations do not get acknowledged, forcing retries, and traffic coming in from the backbone can't go anywhere. Eventually the node's buffer fills up and resets itself, disconnecting all users. This effect is very similar to working simplex on the input of a PL protected repeater. The stations working simplex aren't bothered, but their use of that frequency blocks use of the repeater by other users. *It's Simple Fairness- When On A Simplex Node, Please Don't Connect Direct!* If you do want to work direct, the frequencies **145.71**, **145.75**, and **145.79** are designated for experimental purposes (145.73 and 145.77 are also experimental frequencies, but are currently used by the Seattle area DX Packet Cluster).

Some Puget Sound Area Nodes

147.??	Tacoma	TAC:W7DK-8	145.01	Enumclaw	SEA:WN7ANK-8	145.07	Olympia	OLY:K7APT-8
144.91	Aberdeen	ABER:WZ7A-8	145.03	Port Townsend	PTN:K7TPN-8	145.09	Everett	EVT:KA7VEE-8
144.95#	Seattle	ALKI:N7FSP-1	145.05	Spanaway	SITN2:WA7NTF-8	146.98*	Enumclaw	BALDY:WB6VAC-8
144.97	Victoria BC	SPR:VE7SPR-7	145.05	Vancouver BC	SVAN:VE7LAN-4	224.56*	Bremerton	220IP:WB7FHC-8
144.99	Bremerton	SEAW:N7FSP-8	145.07*	Vancouver BC	YVR:VE7LAN-4	*# Not on network*		** Duplex node*

AMPRNET Maps

Maps of the Pacific Northwest AMPRNET are available from Marc Herold KN7MVO, 4207 222nd Street SW, Mountlake Terrace, WA 98043 and Jim Wagner KA7EHK, 31677 North Lake Creek Road, Tangent, OR 97389. A map of the Western North America AMPRNET is available from Budd Turner N7EOJ, 120 West River Road, Tucson, AZ 85704. Please include a Business-size Self Addressed *Stamped* Envelope when requesting maps.

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[1] NAPRA Membership Services Committee, c/o Steve Stroh N8GNJ, 14919 NE 163rd Street, Woodinville, WA 98072-8957, 206/481-5735, N8GNJ@KD7NM.#WWA.WA, 44.24.0.71.

[2] Please call after Noon, preferably on weekends.

[3] Newsletter Editor is not an official Board position.

[4] Dennis Goodwin KB7DZ, 1748 Harrison Avenue SE, Port Orchard, WA 98366, 206/871-5818 (home), 396-2160 (work), KB7DZ@KD7NM.#WWA.WA, 44.24.0.6.

V 4.0 Updated November, 1990 by Steve Stroh N8GNJ

Northwest Amateur Packet Radio Association

Membership Application and Renewal Form

NAPRA, the Northwest Amateur Packet Radio Association is an organization of Amateur Radio Operators dedicated to the growth of the Amateur Packet Radio Network (AMPRNET) in the Pacific Northwest. Membership is open to all interested individuals. NAPRA's yearly dues are $15.00 and include a subscription to NAPRA's quarterly newsletter Zero Retries. An information package about NAPRA will be sent to new members upon receipt of dues payment.

Name: _____ Call: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ BBS: _____ TCP/IP: _____

Any information you **don't** want published in the NAPRA Roster? _____

The information below is optional. This information helps NAPRA in its efforts to improve the Pacific Northwest Amateur Packet Radio Network.

Packet Capable RF Equipment: _____

Computer & TNC Equipment: _____

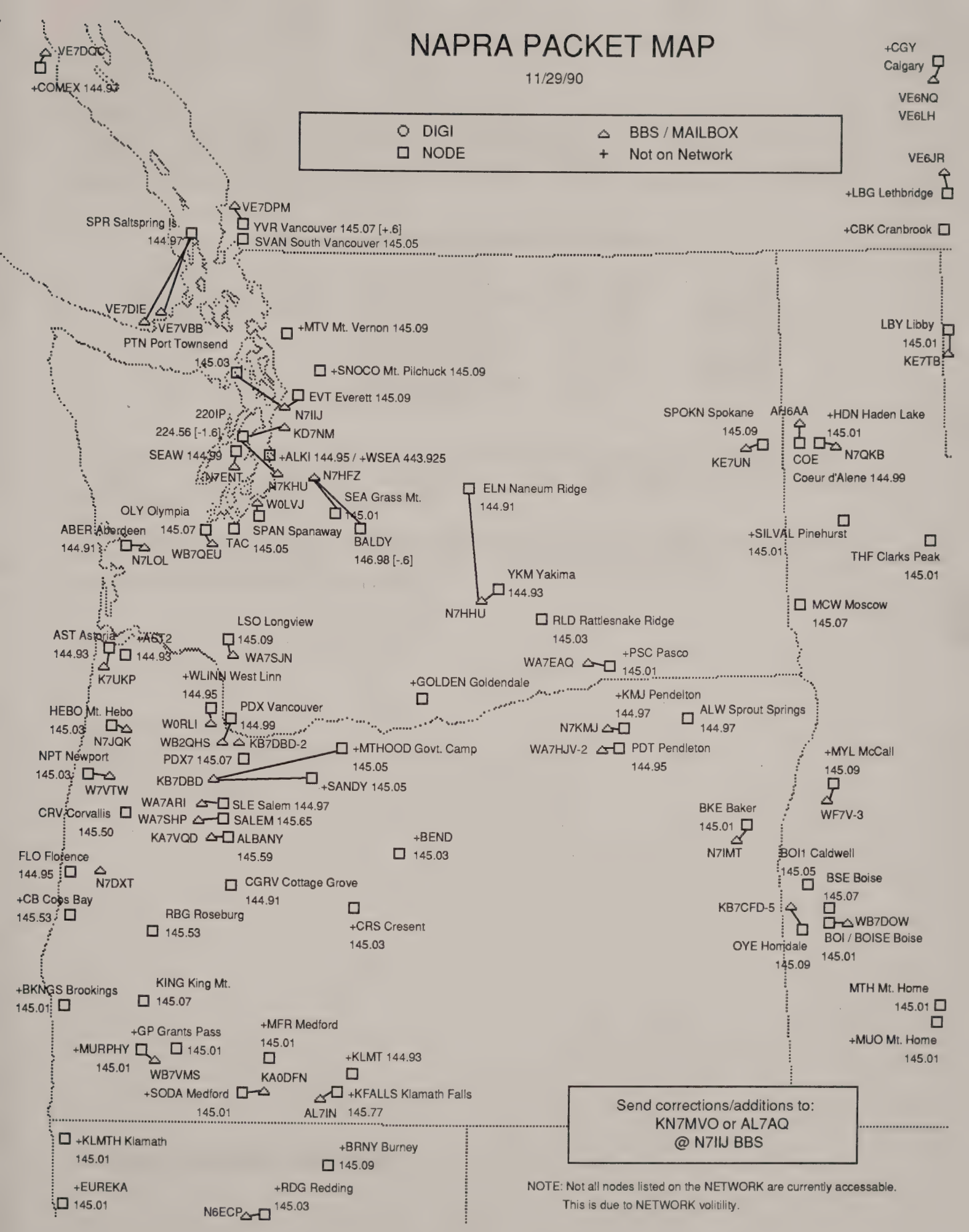
Member of other Organizations? _____

Special Skills (RF H/W, S/W): _____

Any Comments? _____

Please return the completed application and dues to:
NAPRA Membership Services Committee, c/o Steve Stroh N8GNJ
14919 NE 163rd Street, Woodinville, WA 98072-8957

updated November, 1990 by Steve Stroh N8GNJ


NAPRA PACKET MAP
11/29/90
DIGI
NODE
BBS / MAILBOX
Not on Network
VE7DQC
+COMEX 144.93
+CGY
Calgary
VE6NQ
VE6LH
VE6JR
+LBG Lethbridge
+CBK Cranbrook
VE7DPM
YVR Vancouver 145.07 [+.6]
SVAN South Vancouver 145.05
SPR Saltspring Is.
144.97
VE7DIE
VE7VBB
PTN Port Townsend
145.03
+MTV Mt. Vernon 145.09
+SNOCO Mt. Pilchuck 145.09
EVT Everett 145.09
N7IIJ
220IP
224.56 [-1.6]
KD7NM
SEAW 144.99
+ALKI 144.95 / +WSEA 443.925
N7ENT
N7KHU
N7HFZ
W0LVJ
SEA Grass Mt.
145.01
OLY Olympia
145.07
ABER Aberdeen
144.91
N7LOL
WB7QEU
TAC
SPAN Spanaway
145.05
BALDY
146.98 [-.6]
LBY Libby
145.01
KE7TB
SPOKN Spokane
145.09
KE7UN
AH6AA
COE
+HDN Haden Lake
145.01
N7QKB
Coeur d'Alene 144.99
ELN Naneum Ridge
144.91
+SILVAL Pinehurst
145.01
THF Clarks Peak
145.01
YKM Yakima
144.93
N7HHU
MCW Moscow
145.07
LSO Longview
145.09
WA7SJN
RLD Rattlesnake Ridge
145.03
AST Astoria
144.93
+AST2
144.93
K7UKP
+WLINN West Linn
144.95
WA7EAQ
+PSC Pasco
145.01
+GOLDEN Goldendale
+KMJ Pendelton
144.97
ALW Sprout Springs
144.97
N7KMJ
HEBO Mt. Hebo
145.03
N7JQK
W0RLI
PDX Vancouver
144.99
WB2QHS
KB7DBD-2
PDX7 145.07
WA7HJV-2
PDT Pendleton
144.95
NPT Newport
145.03
W7VTW
KB7DBD
+MTHOOD Govt. Camp
145.05
+SANDY 145.05
+MYL McCall
145.09
WF7V-3
CRV Corvallis
145.50
WA7ARI
SLE Salem 144.97
WA7SHP
SALEM 145.65
KA7VQD
ALBANY
145.59
BKE Baker
145.01
N7IMT
+BEND
145.03
FLO Florence
144.95
N7DXT
BOI1 Caldwell
145.05
BSE Boise
145.07
CGRV Cottage Grove
144.91
+CB Coos Bay
145.53
RBG Roseburg
145.53
+CRS Cresent
145.03
KB7CFD-5
WB7DOW
BOI / BOISE Boise
145.01
OYE Homdale
145.09
+BKNGS Brookings
145.01
KING King Mt.
145.07
MTH Mt. Home
145.01
+MUO Mt. Home
145.01
+GP Grants Pass
+MURPHY
145.01
WB7VMS
+MFR Medford
145.01
KA0DFN
+KLMT 144.93
+SODA Medford
145.01
AL7IN
+KFALLS Klamath Falls
145.77
Send corrections/additions to:
KN7MVO or AL7AQ
@ N7IIJ BBS
+KLMTH Klamath
145.01
+BRNY Burney
145.09
+EUREKA
145.01
+RDG Redding
145.03
N6ECP
NOTE: Not all nodes listed on the NETWORK are currently accessable.
This is due to NETWORK volitility.

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NAPRA 1990-1991 Board of Directors

President:	Ken Koster N7IPB	@KD7NM	821-8219
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Director at Large:	Larry Babcock WB7USL	@KD7NM	655-5898

* *Please call after Noon, preferably on weekends.*

The address for editorial contributions to Zero Retries is Steve Stroh N8GNJ, Editor, 14919 NE 163rd Street, Woodinville, WA 98072-8957, 206/481-5735, N8GNJ@KD7NM.#WWA.WA, 44.24.0.71.

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Northwest Amateur
Packet Radio Association
2948 217th Place SW
Brier, WA 98036

Address Correction Requested